

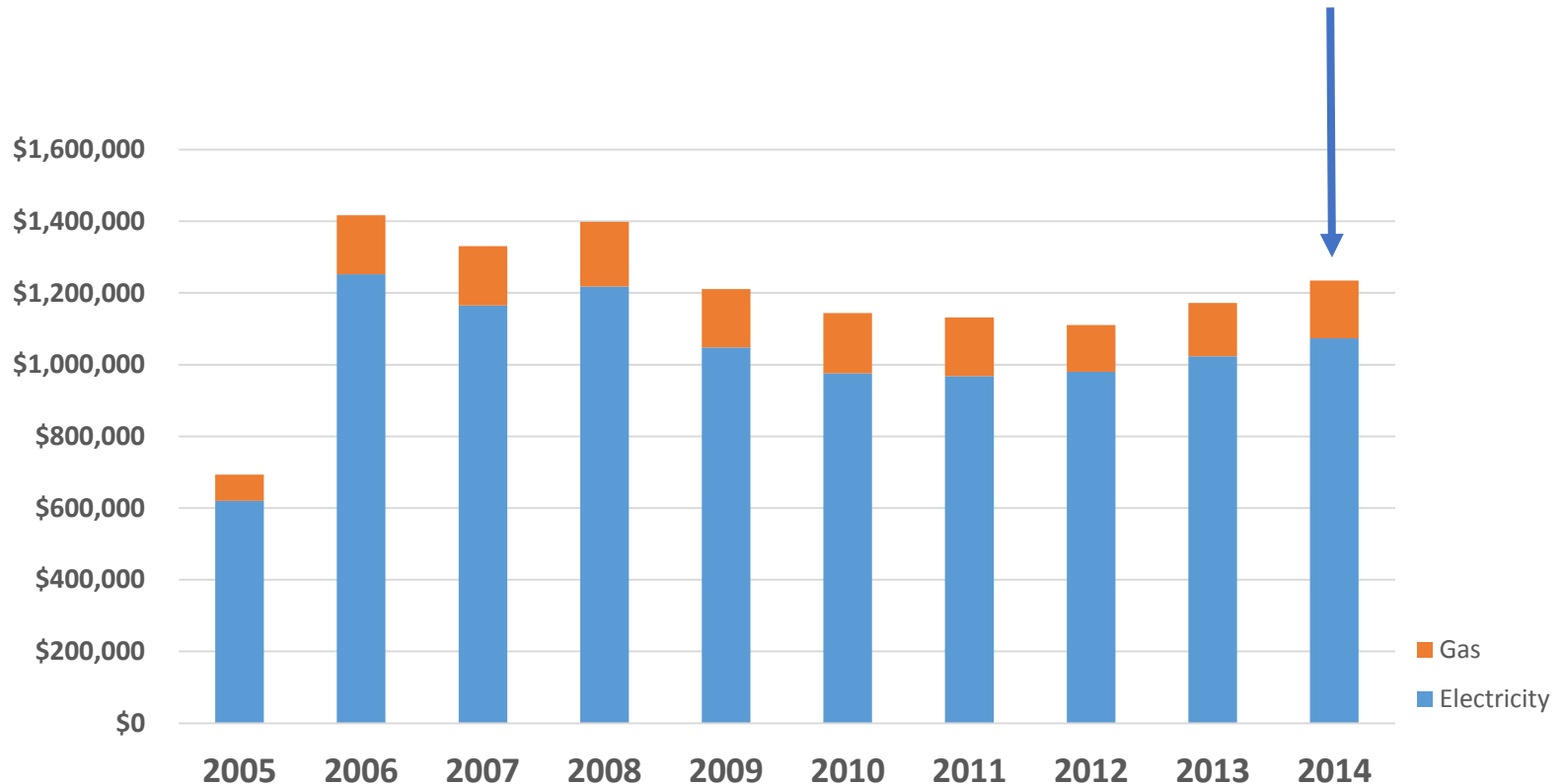
Building Energy Efficiency Improvements

Peter Nierengarten
Sustainability & Resilience Department Director

**City Council Agenda Session Meeting
December 8, 2015**

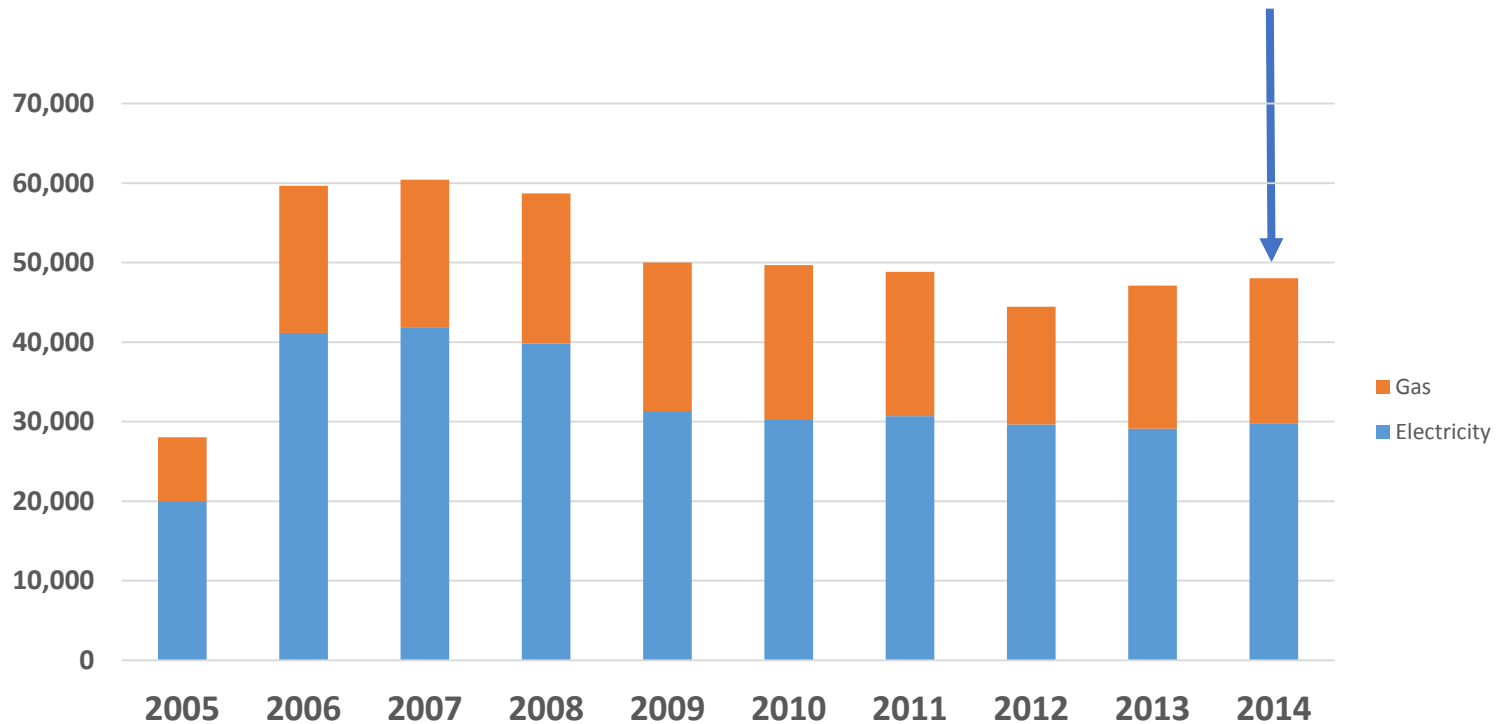
Annual Utility Summary

In 2014, The City of Fayetteville spent \$1.23 million on gas and electricity utilities.



Annual Utility Summary

Energy Consumption (Mbtu)



Energy Efficiency Allocations in 2015-2019 CIP

Energy Efficiency Improvements

\$40k/yr (5 years)

Airport Lighting

\$20k/yr (4 years)

Airport Boiler

\$25k/yr (3 years)

Energy Efficiency Projects

In 2015, to help save energy and money, the City implemented the following energy efficiency projects:

LED Lighting

Recycling and Trash Collection Division Transfer Station
Recycling and Trash Collection Division Spray Foam Insulation
Yvonne Richardson Community Center Gym and Exterior (CIP)
Yvonne Richardson Community Center Simple Saver Insulation System
Dickson St. Street Lights
Drake Field Airport Tarmac (CIP)
Spring Street Parking Deck
City Hall (CIP)
District Court (CIP)
Fleet Division Parts Room and Work Bay Lighting
City Hall Basement Retrofit (CIP)
Media Services Training Room Lighting (CIP)

HVAC & Hot Water

Building Maintenance Building Hot Water Heater (CIP)
Water & Sewer Facility HVAC Condensing Unit (CIP)
Water & Sewer Facility HVAC Condensing Controls Retro- Commissioning
Senior Center HVAC (CIP)
IT Server Room HVAC (CIP)
Fire Station #4 HVAC (CIP)
Fire Station #1 HVAC (CIP)
Fire Station #7 HVAC Condensing Unit (CIP)
Airport HVAC Controls Retro-Commissioning

Recycling and Trash Collection Center

Replaced (33) 400 watt high bay lights
with 100 watt LED fixtures.



Cost	\$15,052
Incentive	\$6,893
Annual Savings	\$4,560
Payback	1.8 years

Yvonne Richardson Community Center

Replaced gym lighting, exterior light fixtures and office lights with LED's or more energy efficient fixtures.



Cost	\$20,215
Incentive	\$3,805
Annual Savings	\$2,009
Payback	6 years

Dickson St. Street Lights

Replaced (70) 170 watt lights on Dickson St. with
60 watt LED fixtures.



Cost	\$13,728
Incentive	\$4,968
Annual Savings	\$3,725
Payback	3.5 years

Spring Street Parking Deck

Installed LED fixtures on the recently completed Spring Street Parking Deck.



Cost	\$48,279
Incentive	\$24,882
Annual Savings	n/a
Payback	n/a

City Hall and District Court

Replacing 13watt and 65watt lights with
10watt and 13watt LED fixtures.



Cost	\$ 1,586
Incentive	\$ 1,270
Annual Savings	\$ 1,031
Payback	2.5 months

Building Maintenance Hot Water Heater

Replaced old hot water heater with a new more energy efficient water heater.



Cost	\$606
Incentive	\$500
Annual Savings	\$100
Payback	1 year

Drake Field Airport Tarmac Lighting

Replaced (18) 400 watt metal halide lights on the Airport Tarmac with 140 watt LED fixtures.



Cost	\$11,531
Incentive	\$2,701
Annual Savings	\$2,550
Payback	3.5 years

Drake Field Airport Energy Manager

1-year whole building energy assessment and controls tuning project

Average annual (May 2012 – April 2014)
energy usage = **\$72,488**

**17%
DECREASE**

IMPLEMENTED ENERGY EFFICENCY MEASURES

1. DELAMPING IN OFFICES (November 2014)
2. TARMAC LIGHTING RETROFIT (June 2015)
3. HVAC RETRO-COMISSIONING (2014 - 2015)

1-yr (Dec 2014 – Nov 2015)
energy usage = **\$60,199**

Water and Sewer Energy Manager

1-year whole building energy assessment and controls tuning project

Average annual (May 2011 – April 2014)
energy usage = **\$37,912**

**8%
DECREASE**

IMPLEMENTED ENERGY EFFICENCY MEASURES

1. HVAC RETRO-COMISSIONING (2015)

1-yr (Dec 2014 – Nov 2015)
energy usage = **\$34,702**

Annual Utility Summary

Total Cost of Projects	\$110,997
------------------------	-----------

Incentive's Received for Projects	- \$45,019
-----------------------------------	------------

TOTAL EXPENSE TO CITY	= \$65,978
------------------------------	-------------------

Annual Utility Bill Savings	\$13,975
-----------------------------	----------

Payback	4.5 years
---------	-----------

Proposed Projects for 2016

- **Drake Field Airport** - Parking Lot Lighting
- **Development Services** - SolaTube Daylighting in Offices
- **Recycling and Trash Addition** - LEED Silver Application
- **City Hall** – Ballasts Lighting Fixtures on the 1st, 2nd, 3rd Floor
- **Compost Building** – Radiant Gas Heater
- **Drake Field** – Tankless Water Heater
- **Fire Station #5** - HVAC Upgrade
- **Meadow Street Parking Deck** – LED Lighting (top floor)
- **Solar Photovoltaic**